The Economics of the Struggling Structurally Unemployed

by

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ABSTRACT: Interviews and field work can form a valuable third means of economic analysis, by guiding and informing more traditional theoretical and statistical approaches. Such research, conducted in West Virginia in 1992, clearly indicates the importance of local industrial composition and restructuring on workers' decisions regarding jobs and unemployment. Rigid wages set above market-clearing levels, persistent yet differential queuing for positions, the segmentation of the labor market into several distinct sectors, and the mobility costs inherent in assumptions about worker adjustment are all crucial determinants of local unemployment.

After years of academic and professional work on the issues of economic transitions in developing countries, my doctoral research explored the process of industrial restructuring in the United States, particularly in terms of its effects on local labor markets and unemployment. West Virginia became the focal case study, with its long history of persistent joblessness as well as its series of well-defined rural labor markets. While the dissertation relied on "traditional" economic theoretical and statistical analyses, those approaches were supported by the field work leg of my research tripod.

The five-month survey was not rigorously scientific. However, the personal and telephone interviews in over a dozen counties were targeted to form a representative patchwork of the area's labor markets. Regional cultures and economies are shaped by local industrial poles, and I sampled some of each flavor - steel mill towns, coal communities, lumber and furniture localities, chemical cities... The contacts ranged from the "labor demand" side (employers, industry lobbyists and consultants, managers...) to the "labor supply" side (workers, their families, union officials on both ends of the hierarchy...) to the elements in between (local and state officials, employment services representatives, reporters, schoolteachers, barkeeps...). Most agreed to be cited by their positions and job status, which will help clarify key differences between sectors.

While West Virginia is often considered to be an idiosyncratic rural industrial state (Billings & Lewis, 1995), these "unique" features in fact highlight phenomena that occur more generally in labor markets. The West Virginia industrial base is bifurcated to an unusual degree into higher-wage blue-collar and lower-wage service employment. In contrast to more complex labor markets, such a clearly delineated industrial structure offers a labor market "microscope" with which to better understand joblessness. Such a structure can be tractably summarized in a limited-sector theoretical model, which provides the basis for an eventual understanding of labor markets with more segments. Furthermore, West Virginia offers a compelling case study for areas undergoing the strain of low-skill manufacturing restructuring, as such senescent industries fade behind of

progressing American economic development. The concentration of unemployment among such blue-collar workers in this country and elsewhere in the (post-)industrialized world makes the understanding of persistent local unemployment particularly intriguing and important.

The central research thesis was that the types of industries that exist in an area, and the changes that occur to that industrial structure, are the primary basis for understanding local unemployment and the regional variations in such joblessness. Recent empirical work has found that similar workers performing similar jobs possessing similar skills receive widely varying wages based on the industry in which they work (Dickens & Katz, 1987; Krueger & Summers, 1986). Given West Virginia's noted simple industrial structure, this phenomenon is captured in a three-sector segmentation of the labor market, which adds an important additional sector to the traditional dual market approach (e.g. Bluestone, 1970; Piore & Doeringer, 1971). The "primary" sector comprises high-wage industries, such as mining and metals, while the "secondary" sector includes lower-wage jobs in the retail trade and service industries. An "informal" or "reservation wage" sector exists as well, which represents individual income-generating efforts if a worker is not in a formal sector. This third category may also proxy for a welfare-based subsistence earnings. The field work highlighted the potential relevance of these divisions, which were introduced into a theoretical labor market model and subsequent econometric testing.

This overview of my field work will focus on four topics, which represent the principal foundations of my model's assumptions. In general, economics treats a local labor market like any other market, where a price matches buyers' (firms) willingness to pay and sellers' (workers) willingness to supply their wares. Yet large numbers of unemployed queue for well-paying jobs, amounting to a supply surplus. Most economists believe that market pressures will reduce the price - in labor markets, the wage - of the

good back towards its market-clearing level. However, wages remain stubbornly high and the unemployed remain jobless. The first section discusses why wages tend to be high in the primary industries. The consequent evidence for persistent labor surpluses and "queues" for such jobs are examined in the second section. Next, the third section explores the evidence for queuing in the low-wage secondary sector. Finally, the fourth section considers the work and migration decisions by workers in terms of their "reservation" wages, which are the minimum levels of pay at which a worker would be willing to work locally. The fifth section offers a concluding synthesis.

i) Wage demands, union-busting, and rent-sharing

"Involuntary" unemployment remains a basic economic puzzle. Market-based theory indicates that skill-adjusted wages should equalize where labor demanded equals voluntary labor supplied. Any unemployment in this context is due to jobless workers with a reservation wages above that of the market voluntarily choosing not to work. But often there exists an acceptable pool of unemployed workers willing to work even at far less than the going wage. Why do companies not hire these workers to reduce their own costs? This question is particularly relevant in blue-collar industries, where there is generally large amounts of locally available unemployed labor desiring jobs having few significant skill hurdles.

Rent-sharing in the primary sector appears to be the source of much of the non-market-clearing unemployment in local labor markets. Workers seem to be able to appropriate a significant portion of the profits, or product and capital market "rents," that firms generate. The noted literature on inter-industry wage differentials indicates that high-wage primary industries are the ones with the most potential rents. Yet how do workers extract such premiums? While the discussion is drawn from my experience with all primary industries, metal and mining firms offer the starkest examples of these

phenomena, and will thus be studied most closely.

The two sides of the labor equation are well aware that coal and steel generate often sizable profits. Both industries also utilize large amounts of increasingly valuable capital. Current workers virtually control the productivity of these expensive machines, which have become decisive elements in continued industry competitiveness. In one steel mill, the installation and use of state-of-the-art Argentine spindles necessitated increased cooperation, training, and care by workers. In coal mines, sophisticated longwall mining equipment operates 24 hours a day in vast caverns, requiring careful monitoring for overheating and clogging. In the apparel industry, advanced sewing machines, which can cost several thousand dollars, must be handled with considerable finesse by seamstresses. In all these cases, effectively monitoring each worker's use of each machine would be intrusive and prohibitively expensive. Both workers and management acknowledge workers' power in such circumstances; employers are explicitly willing to pay "good" wages for those who work with such "complicated" equipment. As the technology improves, wages rise as productivity increases, although often little additional skill is required. In fact, many jobs are made easier.

While skill requirements are generally low for these blue-collar positions, on-the-job training is necessary for workers to reach their productive potential. The success of this training is in turn dependent on the cooperation of current workers, or "insiders." A coal miner in his/her first 6 months of work is referred to as a "red hat," and must be paired with an experienced miner. This transition entails substantial costs to companies, both in the form of explicit wage and implicit opportunity costs, and the dispensed training must be complete for that "red hat" to become a truly productive team member. The power of the insiders in such situations is clear.

John L. Lewis, the influential leader of the United Mine Workers of American (UMWA) during the mid-1900's, translated such power into high wages for his

membership. For workers, there is a tradeoff between securing higher wages and reducing employers' hiring. The average worker in a union is secure in his/her employment, since hiring and firing decisions are based on seniority. Thus, the most powerful senior members of the union have a clear incentive to bargain for higher wages than would be in the interest of junior members or the unemployed.

Furthermore, few workers believe that wage concessions will inevitably lead to more, or even steady, employment. Whether in terms of layoffs or cutting salaries, cost-cutting is seen as a continuing strategy. Given these dangers, labor prefers the "safety" of wage maximization. The fact that wages continue to rise despite considerable joblessness outside the factory gates is testimony to insiders' leverage and the resultant wage focus. Unionization helps this process, but even in non-unionized industries, the twin issues of cooperation and capital vulnerability are at the forefront of wage considerations.

Both implicit and explicit bargaining by labor centers on maintaining or increasing wages, since workers' influence is usually limited to such remuneration issues. Wage concessions are unusual, with the result that adjusting firms tend to reduce employment rather than cut wages. Recall is also based on the "first-out/first-back-in" job seniority convention, which is again to the advantage of the most senior insiders. In fact, there are often implicit agreements between employers and workers to take a 26-week "vacation" financed by state unemployment benefits. This finding may partially explain the 6-month spike in rehiring of the unemployed (Katz, 1986).

While pressure from the unemployed could moderate wage demands, insider power can paradoxically often be strengthened by these local "outsiders." Given the ruralness of this state, most potential "replacement" workers are also local. In the recent Ravenswood Aluminum strike in Jackson county, many such "scabs" had to be hired from outside the area at considerable cost, given the support of the local community for the insiders. Although local unemployed workers would work at the going wages, they

also hesitate to disturb the high-wage spillovers that benefit the entire community.

Such concerns for local impacts may be further supported by a worker's individual decision calculus. Borrowing from game-theoretic analyses, a high-wage/high-unemployment situation may represent rational choices for all agents. Given an idealized initial high-wage situation, unemployed workers must decide whether to underbid current workers' wages or wait in the queue for openings. Queuers are hopeful of gaining entry into the high-wage sector, but they must trade an immediate stream of lower wages against a probability of a higher wage stream starting later. High-wage equilibria can be rational choices even for unemployed workers in a repeated game (Solow, 1990). Employed workers are obviously enthused about such earnings. Firms want to limit wage costs, but will be forced to pay an above-market-clearing wage if both insiders and outsiders "cooperate" in this Prisoner's Dilemma game.

High wages can therefore co-exist with locally high unemployment, with the former attracting jobless queues. This phenomenon has been noted in urban areas of developing countries, as well as in southern California and Alaska, where certain industries' wages pay sizable premiums (e.g. Harris & Todaro, 1969). High local unemployment is thus a rational response to the incentive of high-wage jobs. While West Virginia has one of the lowest state incomes per capita, it also features among the highest manufacturing wages and consistently ranks among the leaders in unemployment rates.

Given such insider/outsider relations and substantial sunk capital, the ability of workers to extract significant proportions of industry rents is unsurprising. Since community dynamics moderate the outsiders' potential pressure on high wages, and given the lack of short-run alternatives to local labor, sunk investment can effectively be held "hostage." Such a situation has been documented in other contracting environments, and can lead to substantial shifting of appropriable rents (Williamson, 1979, 1983; Klein, Crawford, and Alchian, 1978). While employers do not explicitly admit to such potential

worker leverage, the noted comments regarding compensation for key workers and high West Virginia primary wages indicate the potential relevance of such a hostage scenario. Workers are proud and vocal about such power, and directly attribute many of their gains to this leverage.

Intriguingly, all occupations in a rent-rewarded industry tend to offer high wages. While the rent slices distributed to critical production workers is understandable, the power of secretaries and janitors to secure such premia is unclear. Given the camaraderie among a firm's workers, non-core workers may be benefiting from a type of gift-exchange (Akerlof, 1984) supported by a firm's core labor force. Intra-firm worker networks are strong, and are often the basis for job satisfaction. Workers with significant bargaining leverage care about their friends/co-workers, and often include them in explicit bargaining. Even in firms without such negotiations, promoting "teamwork" among the staff implies paying peripheral workers commensurably with core labor. Managers found the fact of well-paid secretaries in the midst of well-paid production workers quite obvious. Disgruntlement of lower-skill workers due to wide ability-based wage differentials may harm individual and overall plant productivity (Levine, 1991; Romer, 1992). Firms may thus compress wages towards those of higher-skill workers, resulting in a (rent-rewarded) wage boost for less "powerful" workers.

The same dynamic may take place even in more white-collar workplaces. Employers appreciate a productive, stable, and harmonious work environment, and thus may be willing to pay an above-market-clearing wage to induce such cooperation. In fact, it may be optimal from the employer's perspective to offer such a high "efficiency" wage, as it reduces costly turnover and improves staff productivity. Jobless queues are considerably shorter for white collar jobs despite their wage premia, given their significant skill requirements. Most workers would not be qualified for these queues.

In comparing the relative insider benefits against the far more numerous and less

well remunerated outsiders, one would expect simmering socio-economic tension in such communities. Instead, the general sentiment is that "it's just good that SOMEBODY'S making it." There also seems to be an explicit understanding of local spillovers to the secondary and informal sectors by local workers, who spend most of their higher incomes locally. In contrast, communities realize that most of the rents that companies retain tend to leave the local area. At the Weirton Steel mill in Hancock county, the National Steel Company had long made good profits in the aging local plant. However, as both sides knew, the firm was milking profits from this plant for investments in other newer mills. When NSX began to look for buyers for the increasingly drained "cash cow," the workers quickly formed one of the nation's first Employee Stock Ownership Programs (ESOP) to gather capital for the bid. When they won the plant, workers accepted lower wages in return for dividends and the knowledge that "the money would stay here in Weirton."

Most primary firms suffer from a lack of trust between workers and management, which undermines wage concessions and shop-floor reforms. "Opening the books" is often the basic issue. Workers want to know just how many rents exist. Employers wish to protect this information. Top-level management tends to have significant personal stakes in firm ownership; public revelation of the true status of their constituent firms could endanger their own financial situations. More generally, yielding to such requests signals that a company is weak in the face of labor demands, hurting investor confidence.

Yet workers are unwilling to make concessions unless such basic financial information is revealed. They argue that "employee involvement," "team organization," and "quality circles" all involve considerable trust from their side, particularly since such innovations would mean reducing their crucial job-specific power over the production process. The few cases of labor/management cooperation have involved, unsurprisingly, compromises on both sides. However, since such efforts generally occur only at troubled firms, the lack of consequent miraculous rebounds is cynically used by employees and

employers to avoid further cooperation.

Many would attribute worker rent extraction to the state's union concentration. West Virginia is indeed a relatively unionized state, although less than popularly believed. In 1992, 18.4% of workers belonged to such labor organizations, as compared to 16% nationally. However, such membership levels are still lower than many states, such as Michigan (25.6%), New York (27.7%), and Hawaii (28.6%). Whatever their concentration, unions are well-placed to force rent-sharing; explicit wage bargaining for a group of workers with significant power is an ideal way to siphon rents. However, non-union firms often have similar work guidelines (e.g. layoffs/hiring) and exhibit similar points of worker power, which yield similarly "worker-friendly" compromises. High wages and long queues can exist even in non-union and non-blue-collar settings.

The threat of unionization is also real, which may further support non-union workers' bargaining leverage. The most susceptible industries (e.g. highly mechanized glass, furniture, metal... plants) tend to be those where worker power is potentially the greatest, yielding union-like wages and benefits. Again, rent extraction seems to be less dependent on unionization and predicated more upon worker/insider control of the production and training process. The "union-threat" effect itself, however, was sharply reduced during the tenure of the pro-employer Reagan and Bush administrations. Both labor and management were well-aware of the tilt of Supreme Court decisions and National Labor Relations Board findings, and deunionization became a trend.

The explicit efforts by coal companies to rid themselves of unions may be the clearest testimony to the rent extraction hypothesis. The labor cost incentive is clear. Union mines pay between $17 and $18 an hour, while non-union mines have wages of between $8 and $10. Such differences do not appear to be based on productivity differences. Organized mines in fact often have significantly lower productivity levels, further highlighting the ability of organized insiders to extract rents.

However, simply converting a union mine to a non-union operation is illegal by state law. Companies must wait a full year to re-open such mines under a different labor structure. Many conglomerate firms use distant subsidiaries to shorten this period, which is known as "double-breasting." Unions have consequently called for more transparency in corporate structure (Browning, 1990). The twin identities of such firms are well-known to coal communities, and the company/worker antagonism, firmly rooted in history, grows deeper with such tactics. Such "scab" mines can have problems attracting local workers. But given wages that are still attractive relative to other opportunities, these mines eventually draw on willing supplies of both local and non-local labor.

More revealing is the fact that many companies are content to wait the full legally-mandated year until reopening. Despite the considerable losses entailed by closing down a productive mine for a year, both in terms of discounted profits and transition costs, coal companies are explicitly willing to pursue such a tactic for lower wages and a larger slice of the rent pie. Given the obvious cost-cutting incentives for firms, the deunionization trend is gathering momentum, particularly in the southern coal counties.

Given the perspectives of both labor and management, the concept of rent sharing, and thus a non-market-clearing primary sector wage, becomes understandable. Both sides pursue their self-interest, which focuses on the rent pie. To this point, adversarial relations have been the rule. Management's power in setting wages is constrained by workers' leverage through the production process, machinery, and training. Workers thus have a direct role in wage determination, which in turn affects firms' employment decisions. If primary sector wages are indeed non-market-clearing, one would then expect queues for such jobs. This issue is explored next.

ii) Steel, Chickens, and Primary Sector Queuing

Given the evidence on rent sharing in the primary sector, we move to a principal

corollary of this hypothesis. In general, if a large proportion of local jobs were in the desirable primary sector, one would expect an associated large amount of local unemployment in the long-term. Furthermore, unemployment should be relatively higher in areas that specialize in particularly attractive rent-rewarded industries.

A comparison of applicants-per-job-opening ratios published in the Economic Summary of the state Bureau of Employment Programs indicates the importance of labor queues. While these data are compiled only by occupation, they are nevertheless revealing as certain jobs are overwhelmingly found only in the primary or only in the secondary sectors. In 1992, service occupations had an applicant/opening ratio of 2.8, while the slightly more attractive clerical and sales positions produced 5.1 candidates for each position. In contrast, primary machine trade jobs had a ratio of 9.3, manufacturing/processing attracted 10.3 applicants per opening, and structural work had a ratio of 11.8. The noted state-wide figures are for the 1992 fiscal year; the relative ratios change little over time. Such data have obvious limitations, given the costless application procedure and limited range of surveyed openings. However, such ratios may also understate the actual queues, given that some primary applicants circumvent the formality of the Job Services Offices, relying rather on direct worksite contacts.

In areas with the most attractive "upper-primary" firms (e.g. steel, mining, chemicals), there are a sizable number of unemployed workers ready to take the first available industry job. Many are local workers who have been laid-off from these same companies, while others come from similar primary sector backgrounds. These queuing workers generally have some link with the primary firm in question, either through their own employment or a friend's or relative's position. It is rare to find people moving from secondary to primary sector jobs.

Those in fact hired for the coveted primary positions almost invariably have personal contacts within the firm. Such forms of "rationing" also further suggest non-

market-clearing wage structures, as a way of allocating these relatively scarce positions. Even in the lower-wage lumber and furniture industries, managers casually noted that they had their choice of potential workers, no matter the state of the general job market. For such high demand positions, it is essential to know someone currently working in the plant, which generally implies that one must have local contacts. Slow employment growth exacerbates this phenomenon.

The use of personal contacts may be the easiest and most efficient means to sort an extended queue. Such links also provide some insurance against a "bad apple," given traceable ties. Almost all the workers to whom I spoke in any primary firm either were local or had family or friends that were local. West Virginians are keenly conscious of roots, and even several generations of residence does not make one a true local. I often heard references to second- and third-generation local families as being from "the Panhandle" or "up North," anywhere but where they were in fact born and raised. While commuting exists, local labor markets predominantly revolve around well-rooted communities. A steel man's son was thus fairly confident that he will get a new mill job if one surfaces; the gas station attendant from outside the area was far less sure. The result is that the unemployed are overwhelmingly local; those with shallower roots, such as our attendant, are less likely to afford the probability of extended unemployment that their weak ties invite. Again, however, such linkages are simply more apparent examples of typical labor market phenomena. where internal contacts are often instrumental in hiring decisions. Osterman (1979) found that the failure of many African-Americans to find higher-wage positions is largely due to their initial exclusion from such opportunities, which did not allow the growth of a contact network.

Surprisingly, most queuing workers do not accept secondary or informal jobs in the short-term. However, such positions can also be relatively competitive. Furthermore, jobs are the principal basis for social status and sense of self-worth for Americans. Coal-

miners are unlikely to apply at McDonalds after several years in the caverns. Employers also hesitate to hire such workers, given this pride and the likelihood of a quick quit when a new primary job appears. Moreover, such positions attract other applicants who are likely to be more stable employees. The two sectors are effectively "balkanized" (Kerr, 1954).

As postulated by Summers (1986), the long-term unemployed tend overwhelmingly to be laid-off workers from primary industries, whose links to these premium jobs can make persistent queuing their best relative option. Declining primary employment prospects, coupled with continuing wage increases, seem to be the principal causes of these lengthy jobless spells. Recall remains a stubborn hope, given the paucity of alternatives. Murphy & Topel's (1987) finding that increases in regional unemployment can largely be attributed to workers who do not change industries also makes sense in this context. The high mobility costs of these older workers, detailed in the fourth section, heightens reliance on their tenuous primary links.

Even without explicit recall arrangements, the cyclicality of many primary industries invites extended queuing with intermittent rehires. The price of coal varies considerably; mines can be open or shut overnight based on such market incentives. Thus, the potential for new jobs always exists. "Punch hole" mines, where new or old pits are opened to mine the most easily accessible veins, also cause job optimism. These dangerous operations are often not formally managed, and pay is not even guaranteed. Yet the possible rewards create jobs. Regulatory changes are also monitored. The Clean Air Act brought much joy to the southern coal counties, as their low-sulphur coal was now competitive against the more easily mined but "dirtier" northern West Virginian and western U.S. coal.

Yet such optimism can not last in the face of clearly declining sectors. While coal production in West Virginia continues to peak, only 5% of the state's labor force is now

mining it. The key has been better technology, with the noted paradoxical effect on heightened wages and unemployment. Many coal counties have been depopulated. McDowell County had a population of 90,000 in the 1950's; it now stands at 32,000. Yet despite this massive outmigration, the unemployment rate (at 22.9% over 1980-1992 versus a state average of 11.6%) is still among the state's highest. Such significant joblessness is based on both persisting disequilibrium and equilibrium phenomena. Mobility costs slow adjustment in such stagnating areas. But the core long-term rate of unemployment, based on the attraction of the local employment pole, remains high.

The differentiation of counties by core primary industry further indicates the relevance of primary queuing. McDowell County has 22% of its workforce involved in coal mining, with the noted average unemployment rate of 22.9%. The state averages for these figures are 5% and 11.6%, respectively. Other counties with different specializations tell an equally instructive story. Pendleton County, which has 32% of its workers in the shoe industry, had an average unemployment rate of 8%. Hardy County, home to a major poultry plant employing 20% of the workforce, had 8.5% unemployment. Pocahontas County, which has 24% of its labor involved in the more lucrative lumber and furniture industries, had a 13.7% average. Both the shoe and food industries could be described as belonging to the lower-primary sector, given their lower wages and gritty working conditions. Lumber and furniture firms pay better wages and also have more pleasant working environments. It is no coincidence that shoes and food processing are also industries populated largely by women, since they lack (male-dominated) internal contacts after years of social stratification (Maggard, 1991). Their hiring prospects are further handicapped by their stereotyped physical weakness in the face of "tough," traditional, and more lucrative blue-collar employment.

In comparing the upper- and lower-primary counties, there is also considerable anecdotal evidence distinguishing the two labor markets. Employment service specialists

in lumber areas reported far less direct interest in the core industries than did their counterparts in coal or steel areas, paralleling Holzer, Katz, & Krueger's (1991) evidence on the relationship between applications, queuing, and wages. All agents had stories of the more stubborn nature of the unemployed in upper-primary areas, given the attractiveness of such jobs. In contrast, jobless workers in lumber areas are more willing to consider other primary jobs, such as cable service or construction, given that pay and benefits were not radically different from those of the core industry. Government employment is also the focus of many job seekers, resulting in extended queues for teaching and other public service positions. While the pay is often low relative to some of the other discussed "primary" posts, job security and substantial benefits can make these openings particularly attractive.

Both statistically and anecdotally, the concentration and type of core primary industries appears to play a significant role in determining long-run unemployment levels. While the focus of many of these tales was on the polar cases of primary metal and mining areas, it is in these counties where one would expect the starkest examples of primary queuing. Much of the same dynamic occurred in lower-primary counties, albeit with consequent lesser effect. Primary queuing, based on non-market-clearing wages, appears to be an important phenomenon.

iii) Dairy Queens, efficiency wages, and secondary sector queuing

In previous dual market work (e.g. Bulow & Summers, 1986), researchers assumed the secondary sector to be market-clearing. Since such industries have few rents and minimal training requirements, there seems to be little basis for a non-market-clearing wage structure. However, employers are clearly concerned about turnover, monitoring, and employee theft, and explicitly incorporate such factors into their pay and hiring decisions. Discussions with secondary sector employers and workers, principally

in the food service industry, seemed to suggest the existence of non-market-clearing wages and consequent queuing.

In this case, "efficiency" wages appear to be the basis for wage-setting. A person will choose to work if the offered wage is higher than her/his "reservation" wage; thus, as market wages increase more workers, having increasingly high reservation wages, appear for hiring. All workers who desire work at a given market wage would then be employed, thus clearing the market. However, there is then no potential penalty for workers who quit or are fired due to misbehavior; they will simply find new jobs at that wage level. Efficiency wages represent the fact that employers will pay more than market-clearing salaries to create a disincentive for such quits and shirks, as well as to improve teamwork and productivity. Jobs in efficiency-wage sectors would now be relatively scarce, with another jobless "surplus" queue (Shapiro & Stiglitz, 1984). While these employers' accounting costs are higher, their true costs may be minimized by reducing excessive turnover and poor workmanship. Higher wages may attract better job candidates as well.

Employment Program (EP) staff and records indicate remarkably high interest in such secondary sector positions, in spite of their low pay and poor benefits. Both EP agencies and employers confirmed that 30-50 people often apply for single openings, corroborating the surprising secondary sector applicant/opening ratios. While most positions involved tough working conditions and odd hours, people still wanted these jobs. While some of these jobs paid only minimum wage, many paid some premium above this benchmark and/or offered fringe benefits. Given the potential stability of wages and fringes, the expected real income from such jobs still exceeded transitory work in the informal sector, which can be devastatingly variable. "It's a steady paycheck."

These various job characteristics attract a disproportionate number of female applicants. As noted, women generally do not have access to most upper-primary jobs. The competition for lower-primary jobs, such as apparel and textile work, is keen, so

secondary sector jobs are simply the best positions for which most women can hope. Some men do work in this sector, although rarely those that have links with the local core primary industry. Male pride plays a complementary role with social stratification.

Superficial evidence for non-market-clearing wages thus seems to exist, particularly given the noted applicant queues and slightly-above minimum wage positions. Discussions with employers offered more conclusive rationales. Retail and service employers all sought to avoid a "revolving back door" at their establishments, given the non-trivial combination of hiring, training, and short-staffing costs. While they could attract workers without offering benefits or paying above the minimum wage, many still offered some combination of both. Most managers preferred hiring women, since they were more likely to be responsible and less likely to quit suddenly. Many looked specifically for women with children, since such workers tend to be stable employees. All these pieces point to the utility of efficiency wages in such an environment to minimize shirking and greater levels of turnover. As in the primary sector, the surplus of applicants requires some means of allocating these positions. Locals clearly have an advantage in securing secondary jobs. Managers often rely on knowledge about a person through kin or other contacts, particularly given their concerns about turnover and theft.

The problem of employee theft was the most surprisingly explicit evidence given for efficiency wages, a phenomenon which has also been mentioned in the literature (Dickens, Katz, Lang, and Summers, 1989). In discussions with fast-food operators, it appears that up to 20% of costs can be due to employee "snacking." Of course, workers who are discovered pilfering are immediately fired. However, if a market-clearing wage existed, such sanctions would have little effect. In fact, though, employers (and workers) believe that such sackings are a deterrent to even greater amounts of "nibbling," indicating that holding these jobs had some premium value. While impossible to confirm with such a limited survey, there did seem to be some positive relationship between the

lack of monitoring and wages, particularly for lower-level night-shift management.

The evidence on wages, benefits, applicants, and employer concerns regarding turnover and employee theft all suggest the presence of non-market-clearing efficiency wages in the secondary sector. Given the alternatives of potentially lengthy primary sector queuing or the vagaries of the informal sector, the secondary sector's relative stability and slight wage/benefit premia are attractive.

iv) Roots, the informal sector, and mobility costs

The reservation wage assumption is seemingly innocuous. Over the long-term, employers can draw on large amounts of labor at this wage, given the supply of extra-regional migrants. However, this simple assumption obscures important local labor participation and short-term adjustment considerations. While West Virginia probably has a more significant informal sector as well as more short-term obstacles to labor movement than other areas, its features highlight the importance of such phenomena in labor market transitions.

The ties that bind people to their homes and communities in the short-term are strong. Mobility costs, and thus adjustment difficulties in the face of economic shocks, can be significant. As both a cause and consequence of these ties, the informal sector is often an important part of the local economy, a fact which has only recently received formal attention by economists (e.g. Benhabib, Rogerson, and Wright, 1991). The fixed reservation wage assumption, and thus an elastic supply of local labor, may in fact be due as much to the local reservoir of informal labor as to the pool of potential extra-regional in-migrants. Eberts & Stone (1992) found that changes in local labor supply can be traced to both significant evolutions in participation as well as to inter-regional worker mobility.

Community roots in West Virginia hollows run deep. Geography plays a major role. West Virginia is justifiably known as "The Mountain State." These hills have been

carved out of the Appalachian Plateau by thousands of years of runoff. Although no peak exceeds 5000 feet, the terrain is remarkably rugged, and road networks are slow. In 1988, the state was finally crossed by interstate highways, which still left most of the less accessible counties just as inaccessible. The result of this topography is a series of small, isolated, and tight-knit communities, often focused on a single hollow. Religion and family tend to be focal points of interaction which further bind these communities. The major local employment poles tend to be the county seats, which are usually the largest towns in a region due to local government jobs and superior infrastructure.

The state has lost about 1/3 of its population over the last 30 years due to outmigration, yet ex-patriates maintain close ties to their local communities. Even in their adopted areas, West Virginians tend to cluster in "holler ghettos." Cleveland has perhaps the largest such community, as a result of previously heavy migration towards its manufacturing jobs. But many such migrants still return quickly to their old roots when jobs become available.

There are more obvious economic reasons for these deep roots as well. West Virginia has among the highest home ownership rates in the country, a surprising fact given the income and poverty levels of its residents. However, the state also has a remarkably high number of older structures, with nearly half of family dwellings built before 1950. As home improvement becomes a luxury, many of these structures are in serious disrepair. Mobile homes and trailers are also prevalent. These tend to be less efficient investments than houses, as many local social workers argue, but the fear of debt and the attractiveness of "mobility" (even if it is rarely used) seem to entrench the trailer phenomenon. Most such residents tend to own, usually through long family history, the piece of land on which the trailer resides, which further roots people to their area.

Home and land ownership not only tie people to a locality, but can make departure difficult during downturns even if relocation is desired. Real estate values

plummet quickly when a local economy's core industry suffers a debilitating shock, making losses on a family's biggest asset a near-certainty. A relatively well-off manager in a hard-hit southern county had been trying to sell his home for nearly a decade. The starting price in 1984, based on an independent appraisal, was $95,000; it was still unsold in 1992, at an asking price of $35,000.

The psychic and economic benefits of these roots are also important. Particularly in areas suffering continuing adversity, kinship ties tend to be a principal source of support, rather than the overextended social service agencies. It is not unusual to see three or four generations living under one roof, and continually working on reshingling it. Despite having the highest poverty rate in the country, the state also quietly boasts the lowest crime rate. A surprisingly large proportion of persons eligible for income support refuse to claim these "handouts," due to both pride and family/informal-sector support.

Trust is a valuable community commodity. Business and social networks are often created simply by a handshake. Such arrangements are again facilitated by local family and contacts. Economists should consider this an efficient result, based on the minimization of transaction costs. Regional scientists see such links as a part of a community's difficult-to-value but yet valuable "social capital" (Bolton, 1992). Child care, a major problem for modern couples, is made easier in such communities. Shifts are often coordinated so children can stay at a neighbor's or cousin's home while their own parents are away. Long-term housewives take care of several children on a regular basis. Remuneration does occur, but some type of barter is just as common.

Such child-care arrangements are just the tip of an informal sector iceberg. Labor participation rates (51.7%) are the lowest in the US (65.6%), and the state rate is a full 9 percentage points below that of the 49th state. Economic life with such low formal participation rates would be virtually impossible without a sizable informal sector. This sector ranges widely in its composition, from women in child-care to male electricians to

female beauticians. However, West Virginia is less exceptional than these participation figures indicate. The magnitude of U.S. home production has been estimated at 20-50% of measured gross national product (Eisner, 1988).

The informal sector serves as an economic safety-net for those out of work. Many men use the skills they have learned in their former trades, such as electrical wiring in construction or motor maintenance in mining, and apply them to local "odd" jobs. Most of the "advertising" is done by word of mouth: "my cousin knows a friend who does great work on fences..." As in the case of primary and secondary queuing, it is helpful to be a local; trust is established by kinship or other relational ties. It is unusual to see out-of-towners succeeding at such enterprises. Again, this feature is not particular to West Virginia. Reputational effects through network contacts are the basis for the success or failure of such services throughout the economy.

These odd jobs can become full-time enterprises, which likely form part of the basis for local reservation wage levels. The documented importance of non-participation in labor supply adjustment (e.g. Juhn, Murphy, & Topel, 1991) may also have its roots in such shadow firms. Many people with talent in a particular area can make a reasonable living through such work. Such a microenterprise's success is clearly a sign of ability, as this openly competitive market allows only the best establishments to survive. Artisans are an especially interesting case in West Virginia. Appalachian handicrafts, such as jewelry, quilts, and woodwork, are slowly becoming known outside of the hollows; within them, they have been the basis for gifts, bedding, and household items for generations.

This sense of community leads to several seemingly paradoxical findings. Despite the wide dispersion in wages, especially in upper-primary areas, there is little social tension. The importance of community in economic decisions is underlined by the fact that stores decrease prices, often to below-cost levels, during particularly troubled

periods. Despite high poverty and unemployment, the development office of one southern coal county had a list of 10 objectives for the year 2000 headed by 3 root-based goals: "Revive old ways of survival (Gardens & Herbs); Conscious of our unique history; A museum of McDowell County." Listed 9th was "[f]ull employment for all especially young people." Several southern coal counties, reeling from years of coal industry decline, nevertheless fought off efforts to introduce large-scale landfills in isolated hollows despite the high-wage jobs that such sites would provide. A mixture of local pride and emerging environmental consciousness produced TEARS-West Virginia (Team Effort Against Ruining Southern West Virginia), which succeeded, despite considerable state pressure, in defeating the developers.

Between the psychic roots, the economic ties, and the "localness" of the informal sector, mobility costs clearly play a major role in determining the ability of local labor markets to adjust to shocks. Transitions between the formal and informal sectors imply some loss in established networks and thus increased uncertainty. Migration also involves leaving the support structure provided by family and informal sector opportunities, as well as the potentially valuable formal sector linkages. All serve to increase mobility costs, and thus may inflate transitory joblessness during negative employment shocks as roots slow residents' departure. Conversely, greater mobility costs also dampen adjustment in booming counties, which may be slow in attracting outside workers.

There is considerable pressure to "reskill." The troubles of the southern coal counties are reflected in the fact that the average age at Bluefield State College, the region's sole higher education institution, has now climbed to 34. Vocational training is still in its infancy. Employers (formal and informal) are still more likely to choose a worker based on local contacts than a diploma.

Many see the adjustment problem as one of information rather than migration costs. Actually, information local job prospects as well as outside opportunities appears

to be surprisingly good. Despite companies' general refusal to open financial records to the public, most locals were fully aware of the company's fortunes; their evaluations generally coincided with the "industry experts." The "Hillbilly Highway" to out-of-state positions is far from random. The routings have ranged from the Ohio steel mills to the North Carolina construction industry, according to an area's employment promise. The network of established, searching, and recently returned migrants seem to make reliable, if limited, sources for job outlooks. These findings again underline the economic importance of local networks.

The younger members of local communities are those who are most likely to migrate, as they are also least affected by the described family, community, and ownership roots. Nevertheless, the roots effect is still strong even for them, as evidenced by the number of such migrants who return to their hollows when job prospects brighten. Older workers suffer most when a local core industry collapses. Such workers do have homes, land, and an intricate support structure in the local community. Furthermore, links to both the formal and informal sectors represent economic sunk costs. Risk aversion is higher when responsibilities are greater and payoffs relative to the well-known local prospects are more uncertain. An unemployed/non-participating former coal miner knows he can somehow make ends meet in the community; "I have no idea whether I could make it anywhere else." The resultant migration costs are greater, and the incentive to queue for dwindling positions that much stronger. As areas depopulate, the proportion of older rooted workers rises. Counties which have undergone continuing negative shocks therefore exhibit increasingly slow and difficult adjustments to further shocks.

v) Synthesis

Non-market-clearing wages seem to occur in both sectors, with consequent labor queues desiring these premium positions. The industrial structure and restructuring of a

region are principal determinants of local unemployment, as the local labor demand of firms influences local labor supply choices, and thus jobless queues. Persistent regional joblessness may then be characterized as structural unemployment. Labor demand shocks and mobility cost considerations influence short-term fluctuations around these longer-term structural features.

Primary sector closures or cutbacks lead quickly to an increase in local unemployment, as workers are shed from local plants. Wages tend however to remain stubbornly high. Local retail and service shops soon feel the effect of such shocks, and contractions in the secondary sector follow. The number of cob-webbed fast-food outlets one sees on the winding southern roads are inversely proportional to the prospects of the local mines. As this labor-demand driven shock subsides, resulting in a new regional employment structure, workers begin to adjust. A few younger ones, convinced that the chances for a job at the local paper mill are no longer good, will migrate out of the county. Older workers with links to the shocked sector may now decide to finally start doing that cable-television work their buddies had suggested. Queuing begins to decline as primary prospects fade.

In contrast, an opening or expansion leads to a quick reduction in unemployment rates, as local primary queuers are hired. The boom causes an upswing in local car and truck sales, requiring more salesmen; the secondary sector grows as well. As this shock looks to be permanent, a (migrated or informal-sector) worker who previously had given up on the local plant contacts the foreman, an old friend, who says that he might be able to find him a job in the next few months. First, though, he needs to go through the "employment service motions" by registering at the local Job Services Office, completing a new resume (the old one, a product of the last such venture, being several years old), and start "looking" for job. Queues begin to lengthen again, and official unemployment slowly rises, adjusting to this positive demand shock.

Blue-collar areas have unfortunately dealt mainly with employment reductions. While out-migration to a nearby county was once a confident prospect even for many laid-off older workers, the demise of low-skill primary industries throughout the region has made such moves more difficult. Younger workers still find jobs elsewhere. But older workers' links to this sector, their increasing risk aversion, and the decreasing number of alternatives ensures that unemployment in such counties will remain high. The fact that wages often continue to climb in these industries further discourages adjustment. As noted, McDowell County has lost nearly 2/3 of its population in 30 years, yet unemployment rates still remain far above average. While there is now a much lower labor force base, the relative attractiveness of the high-wage coal pole continues to yield a relatively high unemployment ratio.

With these issues in mind, many such counties have tried to attract lower-wage primary jobs, often focused on women. In the south, they are wooing textile and apparel companies, with some success. However, infrastructural problems continue to plague many of these areas. McDowell County still does not have a complete sewage system even in Welch, the county seat. Schoolchildren must drink bottled water given the extreme levels of minerals in local piped water. Such a situation is yet another paradox in a county with high average wages, high poverty, high unemployment, and a strikingly high per-capita level of large American sports cars.

Initially, many of the anecdotal and empirical findings seem paradoxical. But there exists a pattern in this patchwork. The multi-sector non-market-clearing perspective offers a framework with which to understand the case study evidence. Persistent unemployment in increasingly depopulated counties, queuing for seemingly unattractive positions, the reticence to move despite continual economic shocks all make more sense when one considers the fact that workers, and thus labor supply, see local labor markets as presenting a range of alternatives created by local industry demand. The lower skills of

both the demand and supply sides of West Virginia labor markets can exacerbate these phenomena, by making queuing for disappearing high-wage jobs both feasible and relatively attractive. Unemployment becomes both a voluntary yet involuntary phenomenon, as workers are simply doing the best that they can with the often shrinking options that they face.

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